

I claim:

1. A hand-held computing device for teaching procedures for solving mathematical problems comprising:

a processor for performing mathematical operations;

a memory including first areas for storing a master group of mathematical operations for solving mathematical problems, which operations are performable by said processor, said memory further including second areas for storing a "problem" linked list of mathematical problems which may include algebraic expression, said "problem" linked list comprising a first data set, said memory further including a third area for storing a mathematical "operations" linked list of selected ones of said master list of mathematical operations applicable to a selected mathematical problem of said "problem" linked list, said "operations" linked list not limited to a mathematical operation which leads to a solution of said selected mathematical problems;

a display for displaying multi-lines of information including said selected mathematical problem and said "operations" linked lists of mathematical operations related to said selected mathematical problem; and

an input device for inputting information related to mathematical problems and for selecting a mathematical operation to be performed on a selected mathematical problem from said mathematical "operations" linked list.

2. The computing device of Claim 1 and further comprising an input/output port for sending and receiving data.

3. The hand-held computing device of Claim 1 and further comprising storing additional linked lists of mathematical problems which include algebraic equations, each additional linked list comprising a different data set.

4. The hand-held computing device of Claim 1 wherein the user may manipulate different problem data sets in response to menu displays.

5. The hand-held device of Claim 4 wherein manipulating said problem set includes opening a problem data set, creating a new problem data set, and saving the problem data set under a new name.

6. The hand-held computing device of Claim 5 and further comprising display menu items for deleting problems, adding problems, or changing problems listed in an open problem data set.

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7. A method of operating a hand-held computing device having a multi-line display, a processor, a keyboard and memory for teaching procedures for solving mathematical problems comprising the steps of:

determining a master group of mathematical operations performable by said processor;

storing at least one "problem" linked list of mathematical problems as a problem data set in said memory;

selecting one of said mathematical problems from said at least one "problem" linked list for solving;

displaying said selected mathematical problem on said display;

storing as a mathematical "operations" linked list, mathematical operations from said master group which are applicable to said selected mathematical problem;

displaying selected mathematical operations from said mathematical operations-linked list, said selected displayed mathematical operations being immediately operable on said selected mathematical problem and not limited to mathematical operations which always lead to a solution of said selected mathematical problem;

choosing one of said displayed mathematical operations;

operating on said selected mathematical problem with said chosen mathematical operation; and

displaying the results of applying said chosen mathematical operation to said selected mathematical problem.

8. The method of Claim 7 and comprising the further steps of selecting the displayed results as the mathematical problem to be solved and then repeating the steps of "displaying said mathematical problem through the step of "displaying the results."

9. The method of Claim 7 wherein said hand-held computing device includes an input/output port and further comprising the steps of providing a connection between said hand-held computing device and another computing device and then receiving said mathematical problems in said problem-linked list from said another computing device.

10. The method of Claim 7 wherein said hand-held computing device includes an input/output port and further comprises the steps of providing a connection between said hand-held computing device and another computing device and then exchanging data there between.

11. The method of Claim 7 and further comprising the steps of providing said hand-held computing device.

12. The method of Claim 11 wherein said step of providing a hand-held computing device comprises the step of providing a device selected from the group of devices including TI-89 and TI-92 Plus.

13. The method of Claim 7 and further comprising the steps of storing at least two "problem" linked lists of mathematical problems as additional problem data sets and selecting one of at least two said problem data sets as the source of problems to be solved.

14. The method of Claim 13 and further comprising changing the selected problem data set by deleting problems from said selected problem set or adding problems to said selected problem set.

15. The method of Claim 13 and further comprising the steps of transforming one or more problems from at least one of said problem data sets to another one of said problem data sets.

16. A method of operating a hand-held computing device having a multi-line display, a processor, a keyboard and memory for teaching procedures for solving mathematical problems comprising the steps of:

determining a master group of mathematical operations performable by said processor;

storing at least one "problem" linked list of mathematical problems as a problem data set in said memory;

selecting one of said mathematical problems from said at least one "problem" linked list for solving;

displaying said selected mathematical problem on said display;  
choosing a mathematical operation from said master group;  
operating on said selected mathematical problem with said chosen mathematical operation; and  
displaying the results of applying said chosen mathematical operation to said selected mathematical problem.

17. The method of Claim 16 and comprising the further steps of selecting the displayed results as the mathematical problem to be solved and then repeating the steps of "displaying said selected mathematical problem" through the step of "displaying the results."

18. The method of Claim 16 wherein said hand-held computing device includes an input/output port and further comprising the steps of providing a connection between said hand-held computing device and another computing device and then receiving said mathematical problems in said "problem" linked list from said another computing device.

19. The method of Claim 16 wherein said hand-held computing device includes an input/output port and further comprises the steps of providing a connection between said hand-held computing device and another computing device and then exchanging data there between.

20. The method of Claim 16 and further comprising the steps of providing said hand-held computing device.

21. The method of Claim 16 and further comprising the steps of storing at least two "problem" linked lists of mathematical problems as additional problem data sets and selecting one of at least two said problem data sets as the source of problems to be solved.

22. The method of Claim 21 and further comprising changing the selected problem data set by deleting problems from said selected problem set or adding problems to said selected problem set.

23. The method of Claim 21 and further comprising the steps of transforming one or more problems from at least one of said problem data sets to another one of said problem data sets.